

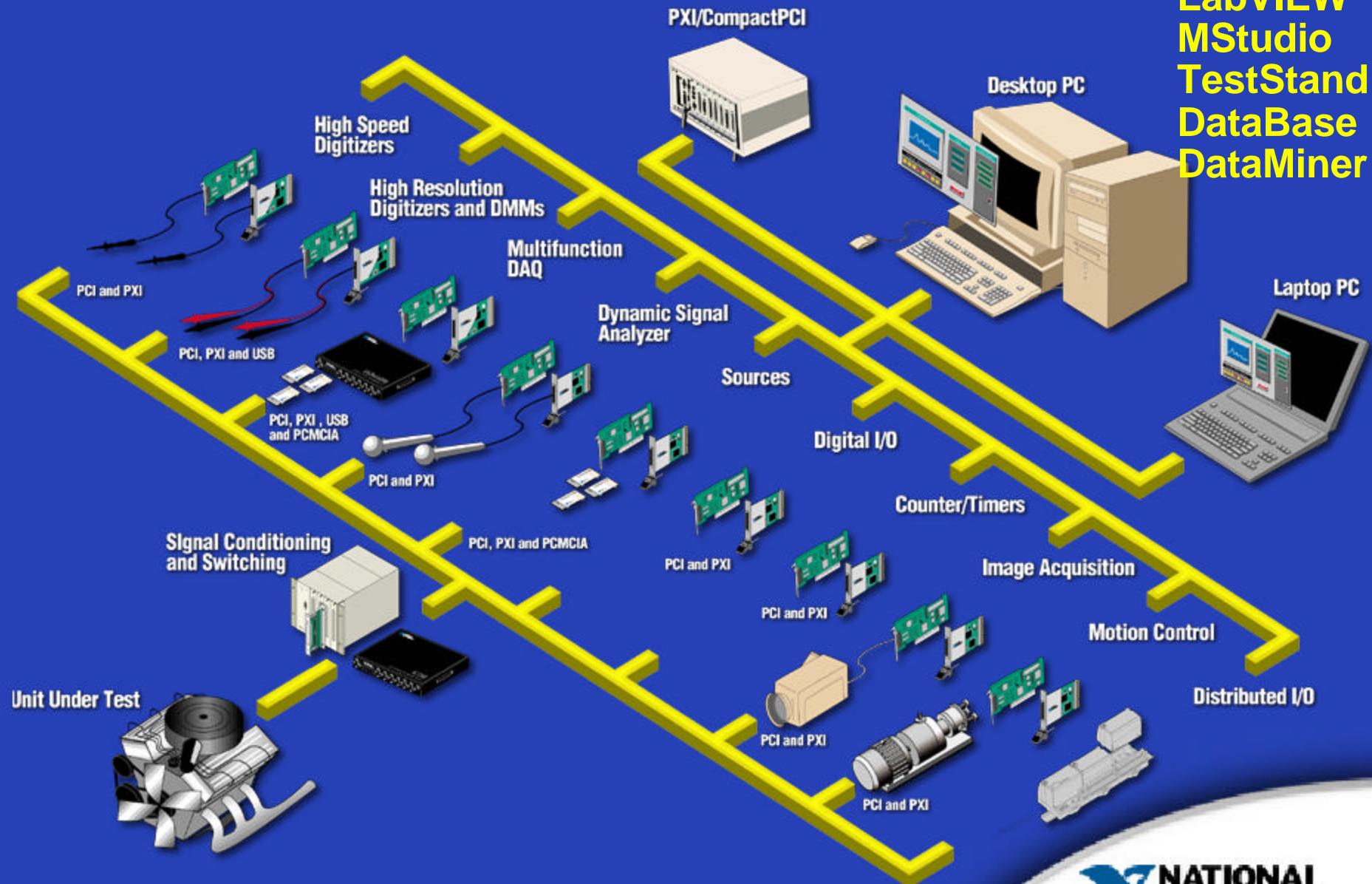
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# **NI's Comments on IEEE 1451.2**

**David Potter  
National Instruments**

# Integrated Measurement and Automation Systems

LabVIEW  
MStudio  
TestStand  
DataBase  
DataMiner



# NI and Smart Sensors: The Big Picture...

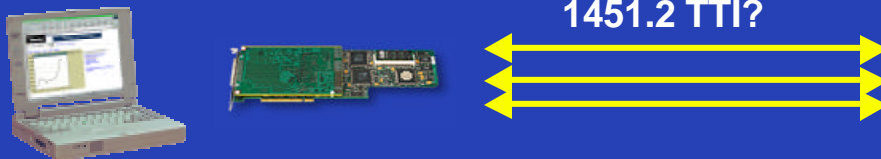
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- Smart sensors will be increasingly important in Measurement and Automation
  - Main driver: easier connectivity and use of sensors
- ‘Smart’ sensors, smart modules, smart systems,...
  - “What is smart” is less important than building integrated systems that deliver the end user benefits
- NI as *both* software and hardware supplier
  - As software supplier: support many networks, devices, instruments, as requested and required by customers
  - As hardware supplier: highly selective of technology for interfaces

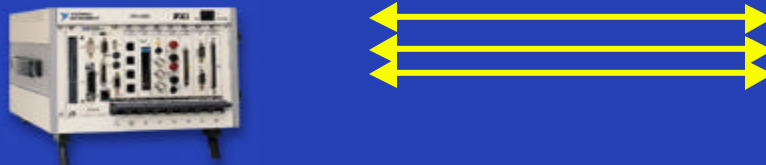
# As hardware supplier... Possible Implementations?

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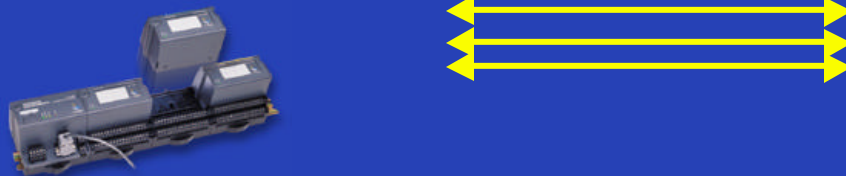
## Plug-In DAQ



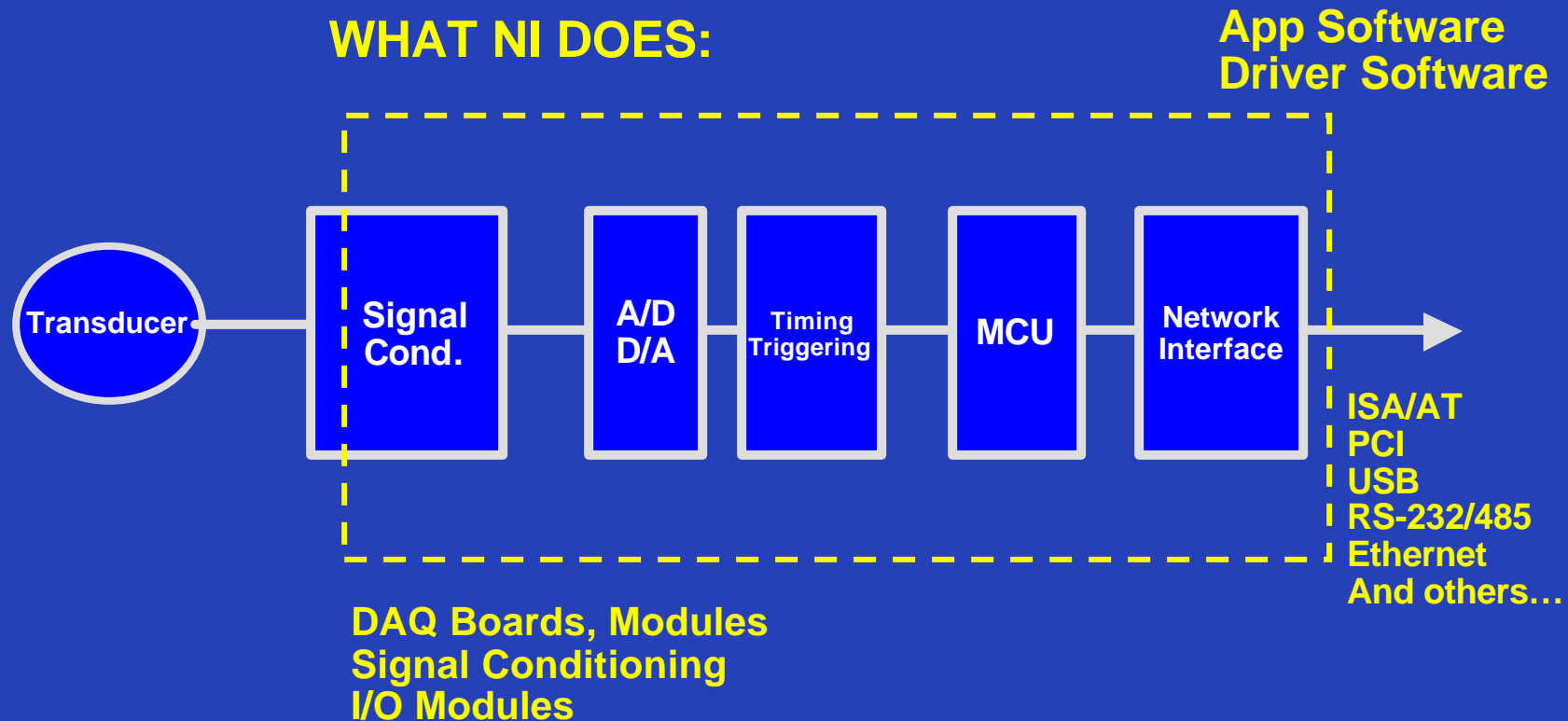
## PXI DAQ



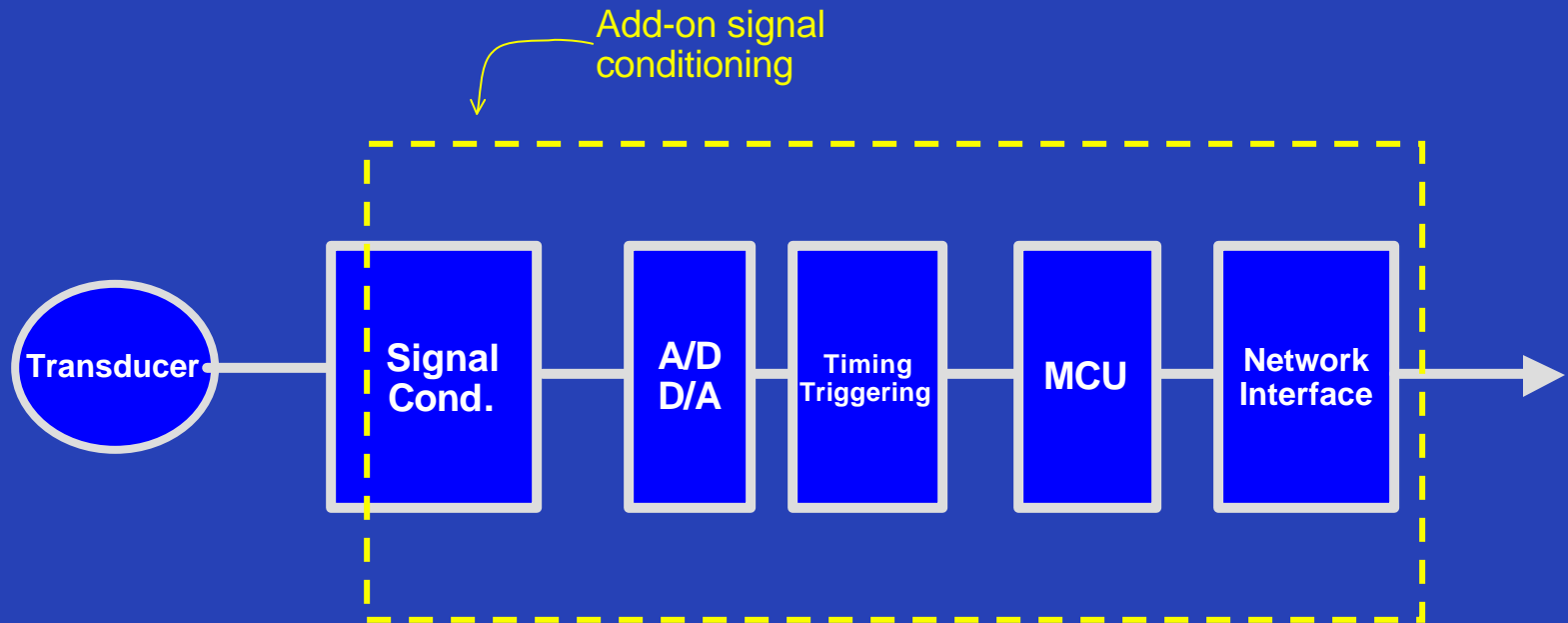
## Networked I/O (DAQ)



# Smart Sensor System Model



# Traditional Partitions



1451.2

**Analog**  
(0-5V, 0-10V, mV, 4-20 mA)

**Network**

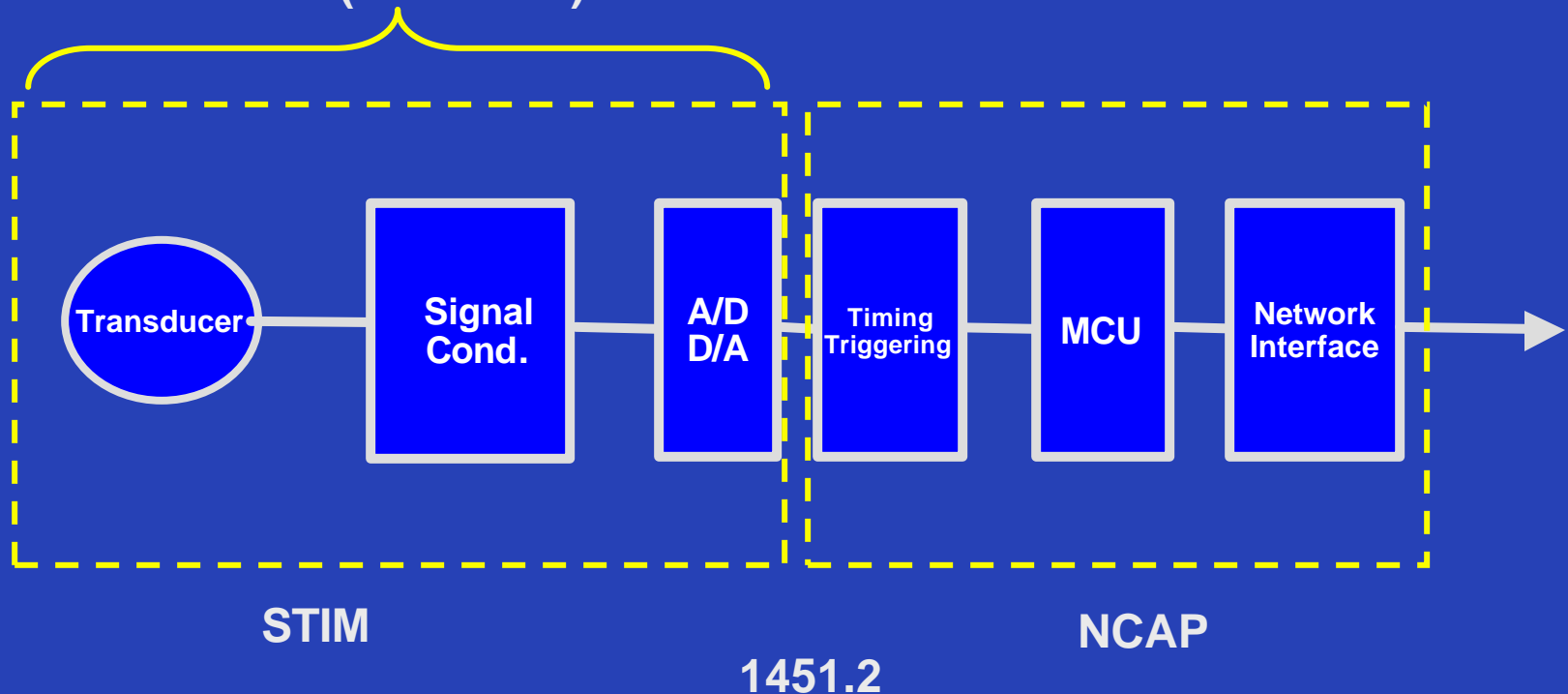
# NI's Thoughts/Reactions on dot2

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- **Partition Location**
  - 1451.4 partition at analog is good fit
- **Seemed more appropriate as OEM (chip-level, module) level interface, rather than an end user interface**
- **Standardized TEDS can ease setup, configuration**
  - Particularly useful: calibration information
  - Very useful if can somehow used across multiple electrical/physical implementations

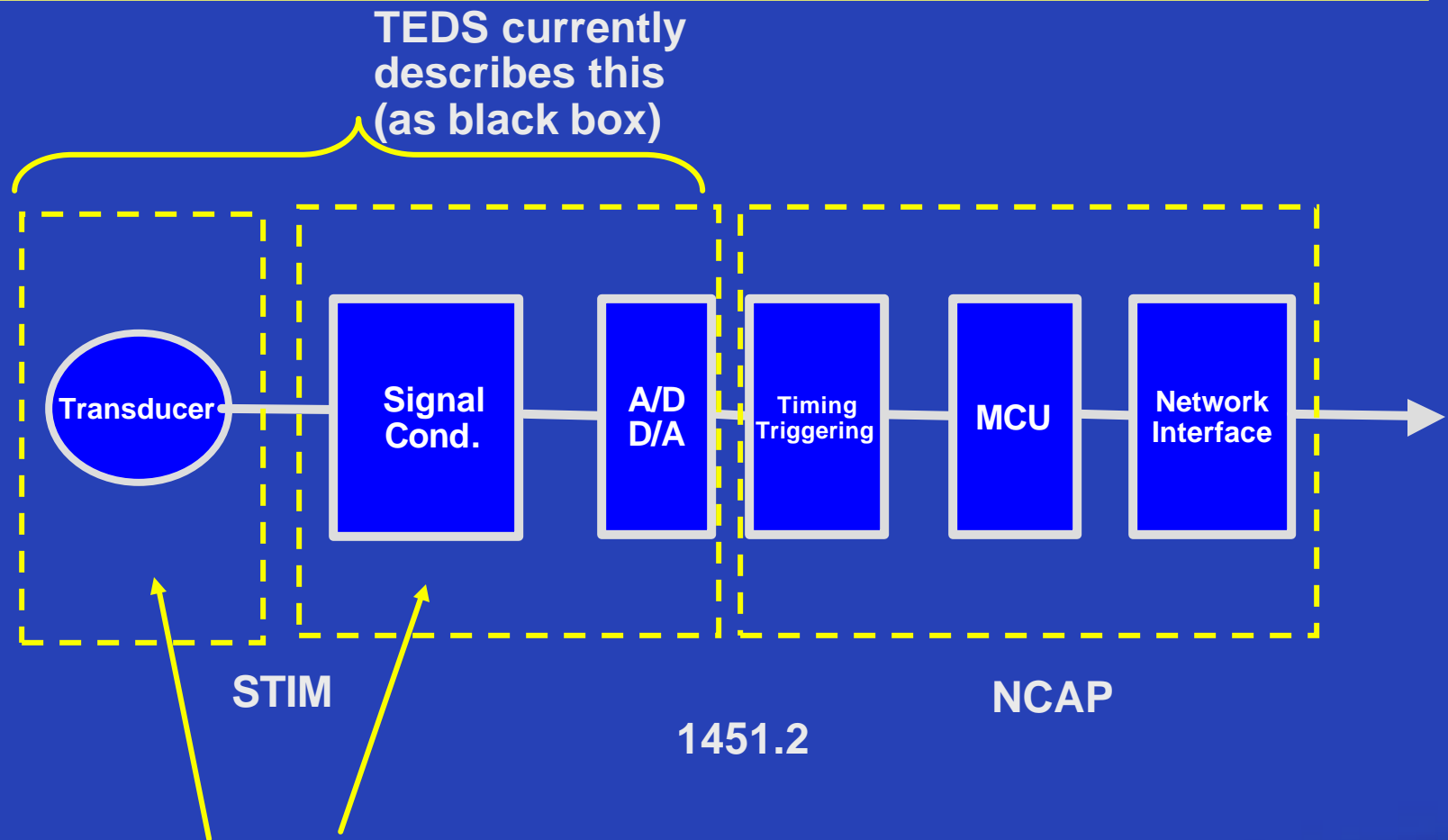
# “Generalized” TEDS?

TEDS describes this  
(black box)



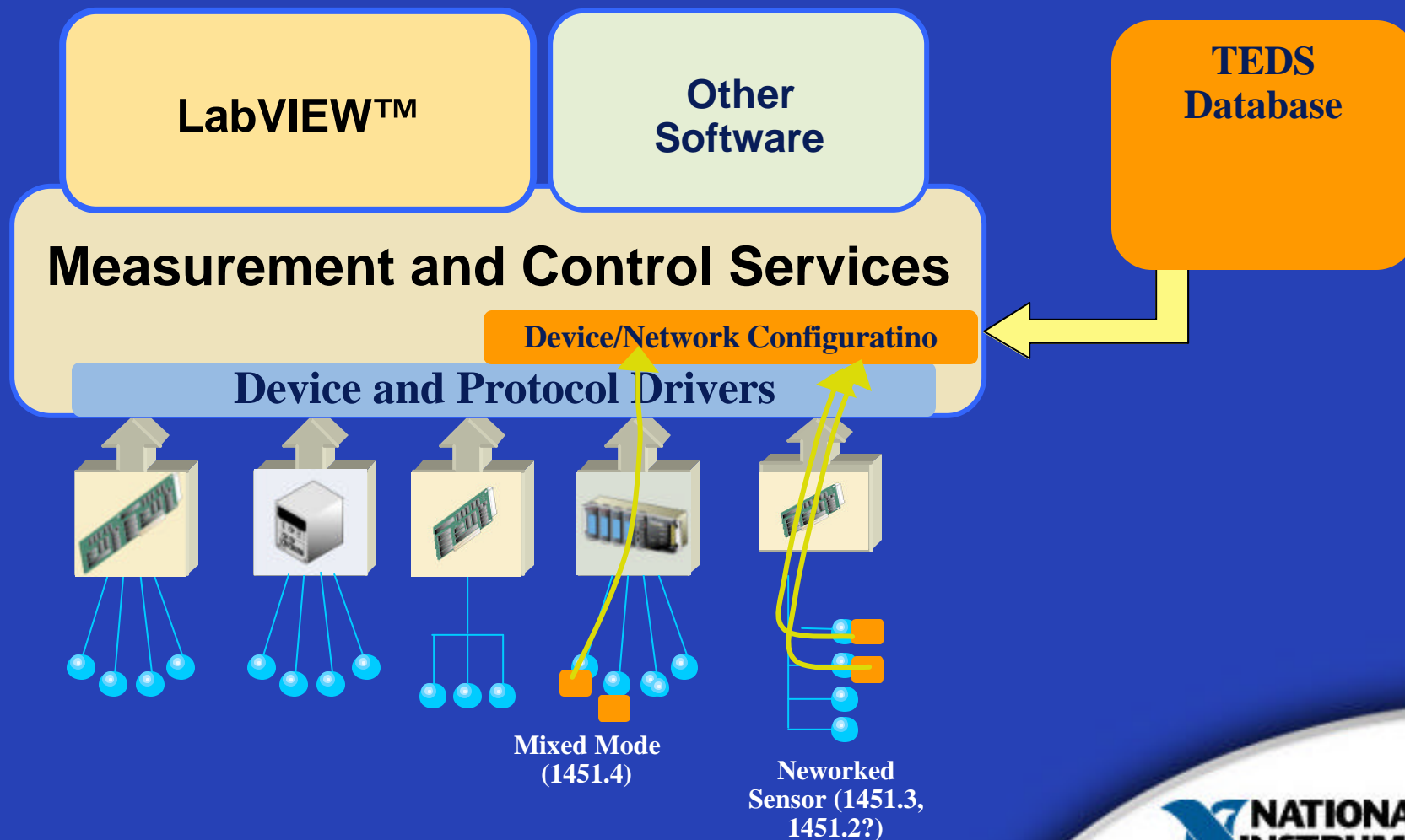


# “Generalized” TEDS?



Generalized TEDS should be able to describe characteristics of these elements

# Software



# NI's Thoughts/Reactions on dot2

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